

MONOGRAPH ON THE AUSTRALIAN LEPIDOPLEURIDAE ORDER  
POLYPLACOPHORA, WITH A DESCRIPTION OF A NEW SPECIES.

By EDWIN ASHBY, F.L.S., M.B.O.U.

PLATES XVI. TO XIX.

[Read May 10, 1923.]

Fam. LEPIDOPLEURIDAE, Pilsbry.

Genus LEPIDOPLEURUS, Risso, 1826.

Of the four genera included by Pilsbry under the family name, two only are found in Australian waters (Man. Con., vol. xiv., pp. 1, 2), and one of these, *Choriplax*=*Microplax*, of Adams and Angas, has been shown by the writer (Trans. Roy. Soc. S. Austr., vol. xlv., 1921, Ashby) to belong to a very different family, that of the ACANTHOCHITIDAE.

Thus the known Australian representatives of this family are all confined to the genus *Lepidopleurus*, Risso.

Genus LEPIDOPLEURUS, Risso, 1826.

Pilsbry (*l.c.*) gives the following characters: "Insertion plates absent. Girdle with minute, gravelly, smooth, or striated scales. Type, *L. cajetanus*, Poli." He also adopts and publishes a description of Carpenter's section *Deshayesiella*, Carp., 1878: "Girdle having delicate spines and chaffy scales. Valves curved and beaked, sutural plates and sinus as in *Lepidochiton*. Type, *L. curvatus*, Cpr."

Thiele (in Chun's Zoologica Heft., lvi., Rev. des Systems der Chitonen, pt. 1, p. 14, 1909) proposes a subgenus, *Parachiton*, with *L. acuminatus*, Thiele, from Duke of York Island as type.

Iredale, in paper on Chiton Fauna of the Kermadec Islands (Proc. Mal. Soc., vol. xi., pt. 1, March, 1914), places his new species *L. mestayerae* under Thiele's subgenus, suggesting that it be elevated to full generic rank, and proposes another subgenus, *Terenochiton*, Iredale, with *L. tropicalis*, Iredale, as type, and suggests that all the small Australian representatives of the genus *Lepidopleurus* be referred to this subgenus.

Iredale and May, in Misnamed Tasmanian Chitons (Proc. Mal. Soc., pts. 2 and 3, November, 1916, pp. 98, 99), discuss Australian representatives of this genus from Tasmania and South Australia, reaching no definite conclusion, but stating: "However, all those we have examined seem to fall into *Parachiton*, since the girdle appears to be covered with slender, glassy spikes." Personally, for the present, I am disinclined to adopt any of the suggested subgenera, but would point out that Carpenter's and Pilsbry's section *Deshayesiella*, which was published by Pilsbry (*l.c.*), seems to exhibit the characters of some of the Australian species and antedates Thiele's subgenus *Parachiton*. I find that the spicules, even more than the scales, in members of this genus, become easily detached, so much so that species that have been supposed to be bare of spicules are found on the examination of fresh, well-preserved specimens to have them present. I have already, in a previous paper, expressed doubts as to the wisdom of dividing this genus into subgenera on such a character.

My thanks are due to Mr. W. L. May, of Tasmania, and Dr. W. G. Torr, of this State, for the loan of much material without which the production of this paper would have been impossible.

The following species have been described as from Australia:—*L. inquinatus*, Reeve, 1847; *L. liratus*, Adams and Angas, 1865; *L. matthewsonianus*, Bednall, 1906; *L. badius*, Hedley and Hull, 1906; *L. columnarius*, Hedley and May, 1908; *L. niger*, Torr, 1911; *L. pelagicus*, Torr, 1912; and, lastly, a form I am describing in this paper and naming *L. profundus*, Ashby, 1923.

LEPIDOPLEURUS INQUINATUS, Reeve, 1847.

(*Chiton inquinatus*, Reeve, Conch. Icon., pl. xxiii., fig. 154, May, 1847; *Ischnochiton inquinatus*, Rv. of Pilsbry, Man. Con., vol. xiv., p. 90; *Lepidopleurus inquinatus*, Rv. of Iredale, Trans. N. Z'd Inst., vol. xlvi., 1914, p. 423; auct. non *L. inquinatus*, Rv. of Sykes, Proc. Mal. Soc., vol. ii., pt. 2, July, 1896; non *L. inquinatus*, Rv. of Ashby, Proc. Roy. Soc. Vict., 33 (N.S.), 1921=? *Lepidopleurus iredalei*, of Ashby, l.c.

In my paper describing the Bracebridge Wilson collection, in the National Museum of Victoria, reference was made to Iredale and May's paper (Proc. Mal. Soc., vol. xii., pts. 2 and 3, Nov., 1916); in commenting thereon it was contended that with the exception of recently-preserved, perfect specimens, the absence, or otherwise, of spicules on the girdle was not a sufficient indication for complete identification, for in this genus the spicules become detached when left long in spirit. The description and figures of Reeve's *L. inquinatus* so perfectly fitted the dredged specimens in the Wilson collection that one seemed justified in accepting Sykes' recognition of Reeve's shell in the dredged specimens in that collection.

I then separated the New Zealand shell on account of its distinctive large girdle scales; the sculpture of that form is so close to that of the Australian shells that, in the absence of the scales, they could not be separated. I therefore gave the name of *L. iredalei*, Ashby, to the New Zealand shell.

When going through the types of Polyplacophora in the British Museum, in June, 1922, in company with Mr. Tom Iredale, he pointed out to me that, in his opinion, Reeve's types of this shell were wrongfully labelled as from "Van Diemen's Land, Dr. Sinclair," and were conspecific with one of the New Zealand shells. He had come to this conclusion as the result of careful comparison with a number of specimens loaned to him by Mr. W. L. May and Dr. W. G. Torr, from Tasmania and South Australia, respectively. These specimens are now before me, and I regret they were not available for my comparison with Reeve's types while I was in the British Museum. But this is less important in face of the fact that Mr. Iredale had had ample opportunity of making such comparisons prior to my reaching London. I had with me a disarticulated spirit specimen from the Wilson collection, and the following is a copy of my notes:—"There are four specimens of Chitons on Reeve's type tablet; one is a juvenile *Ischnochiton*, probably *lincoluensis*, Ashby; one had been disarticulated by Sykes; the remaining two were compared with the Victorian specimen I had brought with me. This latter is a little deeper in sculpture than those on the tablet, but otherwise similar; on the other hand, the girdle scales on the Victorian specimen are much smaller than those of the two on the tablet, and the bases of numerous spicules are apparent on the former, whereas I cannot detect them on Reeve's specimens; although they are dirty, they certainly accord more with the New Zealand species, with which I believe them conspecific."

As before stated, in good specimens there is very little difference in the sculpture between the New Zealand shells and these dredged Australian ones, but the larger and broader scales and absence of spicules, except at the sutures on the former, easily separate the two. I am therefore concurring with Mr. Iredale's opinion that Dr. Sinclair's specimens were not from Tasmania but from New Zealand.

Iredale and May (*l.c.*, p. 99) say, "Moreover, we have two species collected on the New Zealand littoral." So while the name *L. inquinatus*, Reeve, must in future be limited to the New Zealand shell, it is not quite certain whether *L. iredale*, Ashby, is a synonym thereof or stands as the name of the second species, referred to by Iredale and May—that question must be left for future determination.

LEPIDOPLEURUS LIRATUS, Adams and Angas, 1864.

Pl. xvi., fig. 1.

(Proc. Zoolog. Soc. (Lond.), 1864, p. 192; Angas, *l.c.*, p. 187, 1865; *L. inquinatus*, Rv. of Bednall, Proc. Mal. Soc., vol. ii., pt. 4, p. 141, 1897; *L. inquinatus*, Rv. of Torr, Trans. Roy. Soc. S. Austr., vol. xxxvi., p. 141, 1912; *L. liratus*, Ad. and Ang. of Ashby, Proc. Roy. Soc. Vict., 33 (N.S.), 1921.)

*Introduction.*—While Adams and Angas described several different chitons under the generic name *Lepidopleurus*, they do not appear to have recognized its generic characters; the species under consideration is the only one of them that properly belongs to this genus. This fact led Pilsbry to suggest that "it might be an *Ischnochiton*."

The following is the original description:—"Shell small, elongated, convex; yellowish-brown maculated with pale brown. End valves and lateral areas concentrically, remotely sulcated, densely and minutely lirate, the lirae closely pustulose. Posterior valve elevated, lateral areas slightly elevated; median valves obtusely carinated in the middle; dorsal areas longitudinally lirate, the lirae closely pustulose. Girdle pale brown, densely covered with minute scales. Length, 8 mm.; width, 4 mm. Yorke Peninsula, South Australia, under stones at low water. Angas." Note by Author.—The girdle is clothed with flat, elongate, imbricating scales, mostly straight-sided and considerably longer than broad, which are very easily detached. From amongst these scales proceed, chiefly near the shell, long, white, cylindrical spicules, which are about four times the length of the scales; these spicules are in clusters at the sutures, elsewhere more or less scattered. The girdle is also furnished with a spiculose fringe and the underside is closely covered with flat, elongate scales. This species is a littorine form, and although never common, I have collected it at all places visited in St. Vincent Gulf, and also at Port Lincoln, and have recorded it for the State of Victoria. Dr. Torr has found it at Port McDonnell, in the South-east of this State, to St. Francis Island in the west. As this species does not appear to have been figured hitherto, one is included in the plate accompanying this.

LEPIDOPLEURUS MATTHEWSIANUS, Bednall, 1906.

Pl. xvi., figs. 5, 5a.

(Bednall, Proc. Mal. Soc., vol. vii., pt. 2, June, 1906, p. 92, pl. ix., figs. 1 1-f; Torr, Trans. Roy. Soc. S. Austr., vol. xxxvi., 1912, p. 142; Papers and Proc. Roy. Soc. Tas., p. 28 = *L. niger*, Torr, Trans. Roy. Soc. S. Austr., vol. xxxv., 1911.)

The writer supplied the specimens to Mr. Bednall which were used in the original description; they were from Marino, which is therefore the type locality. He found it on the occasion of his first collecting trip to that locality, in 1897, and he has since taken them at most of the localities visited in South Australia. It was because of Mr. Bednall's request that he refrained from naming this shell. *Original description*:—"Shell elongate, regularly arched; keel and lateral areas indistinct, but clearly defined when seen through a lens; jugal area absent; lateral slopes rounded. Colour greyish-white. Anterior valve closely, minutely, regularly, radially granulated throughout. Central valves similarly ornamented, the granulations running longitudinally on the dorsal area and radially on the lateral areas, the granulations by their direction defining the areas. Sutural plates small, triangular, and very distant, the jugal sinus consequently being

exceedingly wide; posterior dorsal margin straight. Posterior valve as the others, and with prominent, central, obtuse, elevated apex, the slope to the margin being slightly concave. Bednall. Length, 9 mm.; breadth, 3.5 mm. Hab., St. Vincent Gulf."

*Note*.—The description should have the words "and pleural" inserted, then reading, "The granulations running longitudinally on the dorsal and pleural areas." The body of this species is nearly always bright pink or red, but sometimes practically black. The shell varies from grey to rufous or dark brown.

#### LEPIDOPLEURUS COLUMNARIUS, Hedley and May, 1908.

Pl. xvi., figs. 3, 3 a, b.

(Hedley and May, Rec. Austr. Mus., vol. vii., No. 2, p. 123, pl. xxiv., figs. 27, 28; May and Torr, Papers and Proc. Roy. Soc. Tas., p. 28, 1912=*L. pelagicus* of Torr, Trans. Roy. Soc. S. Austr., vol. xxxvi., pp. 165, 166, pl. 5, figs. 2 a-f, 1912; Gatliff and Gabriel, Proc. Roy. Soc. Vict., vol. xxvi. (N.S.), p. 78, 1913.)

*Original description*.—"Valves round-backed, greatly arched, lateral areas inclined to the rest of the valve. Posterior valve with full rounded umbo. Girdle with minute, dense, imbricating scales. Colour uniform waxen. Sculpture; minute grains strung in longitudinal, radiating rows, parted by deep grooves of equal width. Going forward from the mucro additional rows are intercalated. The pleural and jugal areas together have about 50 rows. The lateral areas are differentiated by densely packed, less prominent, and disarranged grains. Length of single curled and shrivelled specimen, about 8 mm.; breadth, 3 mm."

To the above description I would add, from an examination of the Port Arthur specimen:—"Valves carinated as well as very greatly arched; lateral areas beset with radiating rows of closely-packed granules (about 20 rows in specimen before me); the posterior margin is deeply toothed, the separating grooves being diagonally turned upwards. The girdle, in addition to the scales, is furnished with slender, white spicules. For further details see notes under *L. pelagicus*, Torr. Hab.—The type with two valves was dredged by Mr. W. L. May in 100 fathoms, seven miles east of Cape Pillar, Northern Tasmania. The same gentleman dredged several valves in 80 fathoms off Schouten Island.

One almost complete specimen, girdle damaged, dredged in 70 fathoms, off Port Arthur; dredged in Bass Strait by Trawler "Endeavour"; dredged by Sir Joseph Verco, in 130 fathoms, off Cape Jaffa; and several valves, off the south-east coast of South Australia, in 300 fathoms.

From the foregoing records it will be seen that this species is essentially a very deep-water form, being found in varying depths from 420 feet to 1,800 feet.

#### LEPIDOPLEURUS BADIUS, Hedley and Hull, 1909.

(Hedley and Hull, Rec. Austr. Mus., vol. vii., No. 4, p. 260, pl. 73, figs. 1, 2, 1909; Ashby, Trans. Roy. Soc. S. Austr., vol. xlv., 1920, p. 283.)

*Original description*.—"Shell small, broad in proportion to length, rather low, rounded dorsally. Sculpture uniformly grain-striate. Colour entirely ochraceous, the valve margin sometimes rust. Anterior valve densely radially grained. Median valves narrow with a straight, posterior edge; central and jugal areas confluent, lateral areas indistinctly indicated by a slight fold. About 50 grain-rows to a valve, medially about a dozen grains are close set in a row, but wider apart from row to row, the rows longitudinal in the middle, converging at the sides, and losing their regularity on the lateral areas. Posterior valve with central, elevated apex and concave, posterior slope. Girdle beset with small chaffy scales, fringed with spicules. Interior white, sutural plates rounded, jugal sinus very broad and shallow. Insertion plates entirely absent. Length, 6 mm.; breadth, 3.5 mm. The body of the animal is a deep-red colour."

*Note*.—I have taken this rare *Lepidopleurus* at Marino and Cape Jervis, and Dr. Torr has recently taken it at Kangaroo Island, all in this State.

These differ from *L. matthewsianus*, Bed., in being broader, slightly carinated, granules coarser and further apart. Specimens taken in this State differ considerably from one another in system and regularity of sculpture; in some, the granules are placed quite irregularly, in others in fairly definite rows. Thus although several of them show decided differences from the paratype that was given to me by Mr. Tom Iredale, this element of variation prevents one from considering them distinct. In none of the specimens collected by myself can the animal be described as "deep-red" colour; in every case it has been buff.

Hedley and Hull record it from "Balmoral and Shark Island (Port Jackson); Long Reef, near Narrabeen, though a rare shell."

#### LEPIDOPLEURUS NIGER, Torr, 1911.

Pl. xvi., fig. 4.

(Trans. Roy. Soc. S. Austr., vol. xxxv., pp. 105, 106, pl. xxv., figs. 5 a-f, 1911.)

Dr. Torr has been good enough to allow me to examine the type of *L. niger*, Torr (which for some years has been misplaced), and I find it undoubtedly conspecific with *L. matthewsianus*, Bednall. Torr records that only one specimen was found "under stones, in shallow pool at Hopetoun, Western Australia," and no other member of this genus is recorded as having been found on the trip. On seeing the type specimen I noted at once that it had only 7 valves, and on turning up the figures accompanying the original description I found that it had been figured with only 7 valves, and had evidently never been disarticulated, as no sutural laminae are shown. It is one of the black-footed varieties of Bednall's shell, which, owing to the absence of one valve and the crowding of those that remain, gives the shell a very unusual appearance.

Dr. Torr, on p. 106, *l.c.*, remarks, "I had classified this as *L. matthewsianus*, Bednall, but on comparing them I found it much broader in proportion to its length, and the body of the animal, which is uniformly red in *L. matthewsianus*, is almost black in *L. niger*."

Although the foot is usually red, as before noted, I have found a good many with a practically black foot.

While the recognition of *L. niger*, Torr, as conspecific with Bednall's species, removes *L. niger* as a species from the fauna of Western Australia; Torr's find places *L. matthewsianus*, Bed., for the first time on the Fauna List of that State. And further, it is the first record of the occurrence of a member of that genus in Western Australian waters, and Dr. Torr is to be congratulated thereon.

#### LEPIDOPLEURUS PELAGICUS, Torr, 1912.

Pl. xvi., fig. 3b.

(Torr, Trans. Roy. Soc. S. Austr., vol. xxxvi., pp. 165, 166, pl. v., figs. 2 a-f, 1912=*L. columnarius*, Hedley and Hull, *l.c.*)

Mr. Tom Iredale, while we were together examining the types of *Polyplacophora* in the British Museum, in June last, called my attention to the differences in the descriptions of the girdle characteristics of *L. columnarius*, Hedley and May, and *L. pelagicus*, Torr, suggesting the possibility that the two species were not conspecific, as had been determined by Gatliff and Gabriel (*l.c.*).

As before quoted, Hedley and May say of the first-named species, "Girdle with minute, dense, imbricating scales"; whereas Torr in his description of *L. pelagicus* (*l.c.*, p. 165) says, "Girdle leathery and spiny to the unaided eye; under 1½-inch lens it is covered with minute spicules."

An examination of the valves dredged with the type of *L. columnarius* in 100 fathoms, off Cape Pillar; of the valves dredged off the Schouten Island; and the complete specimen dredged off Port Arthur, led me to conclude that they were all conspecific with Torr's *L. pelagicus*. The girdle of the Port Arthur specimen, in which a portion is fairly well preserved, is clothed with long, flat, pointed imbricating scales very similar to those of *L. liratus*, Adams and Angas, but it is furnished also with a number of slender, white spicules, in this respect corresponding with Torr's description of the girdle of *L. pelagicus*. I wrote recently Mr. Chas. Hedley in reference to this feature, and he has re-examined the type of *L. columnarius*, and he writes to me as follows, on February 26, 1923: "The girdle of the type is much shrivelled, but looking at it again for the purpose of this letter, I should consider it to be spiculose."

It will be seen that while there is some divergence in the sculpture and angle of divergence of the various specimens examined (the former is probably due to wearing), there are not sufficient grounds for separating them into two species, the fact of the presence of spicules on the girdle of *L. columnarius* having been overlooked in the original description. Mr. Iredale had concluded that the large specimens I am describing in this paper under the name of *L. profundus* were possibly Torr's *L. pelagicus*, because of the spiculose character of the girdle; the extreme elevation of the shell of *L. columnarius* easily distinguishes that species from any other known member of this genus. I figure a photograph of one of the valves of the type of *L. pelagicus*, edge on, and also a valve of one of May's *L. columnarius* in a similar position; they will be seen to be almost identical.

### *Lepidopleurus, profundus*, n. sp.

Pl. xvi., figs. 2, 2a.

(=*Lepidopleurus inquinatus*, Reeve of Sykes, Proc. Mal. Soc., vol. ii., pt. 2, 1896=*Lepidopleurus inquinatus*, of Reeve of Ashby, Proc. Roy. Soc. Vict., 33 (N.S.), 1921.)

*Introduction*.—The recognition of the New Zealand *Lepidopleurus*, as being conspecific with Reeve's type of *Chiton inquinatus*, leaves the deep-water species (*l.c.*) without either description or name. I therefore propose the name of *L. profundus*, referring to its deep-water habit as compared with its littorine relatives, *L. liratus*, Adams and Angas, and *L. inquinatus*, Reeve. The specimens referred to in the following description were indeterminately referred to by Iredale and May, in their discussion under the heading *Lepidopleurus inquinatus*, Reeve (Proc. Mal. Soc., vol. xii., pts. 2 and 3, Nov., 1916, pp. 98, 99).

*General appearance and colour*.—Slightly carinated, not evenly arched as in *L. matthewsianus*, Bed., and is slightly more keeled than is the case in *L. liratus*, Adams and Angas, sculptured in dorsal and pleural areas with narrow, finely granulose, longitudinal ribs, and in the lateral areas with closely packed, granulose, radial ribs of about half the width; this area is also strongly corrugated by transverse growth sulci.

The colour of the type, which has evidently been in spirit, is pale biscuit colour, but the fresh specimen from Port Arthur is Pinkish-Buff along the dorsal ridge and mottled Pinkish-Cinnamon along the sides (Ridgway's Colour Standards, pl. xxix.).

*Anterior valve*.—Raised, broad, decorated with closely-packed, very narrow, polished, granulose, radial ribs (about 100 in type); the granules coalesce and are less rounded than is the case of *L. liratus*.

*Posterior valve*.—Mucro very distinct, median, or a little behind the middle, the anterior portion decorated similarly to the dorsal and pleural areas of the median valves, the sculpture of the posterior half corresponds with that of the

anterior valve, except that in addition there are several well-defined growth sulci. The posterior slope is slightly concave but steeper than in *L. liratus*. Commonly in the latter species the mucro is more prominent, due to the posterior slope immediately behind the mucro being almost vertical and then flattening out to the girdle.

*Median valves*.—The dorsal and pleural areas decorated with longitudinal ribs composed of closely-packed, imbricating, flattened granules. In the dorsal area, these pectinated ribs are very close together, but, in the pleural area, they become further and further apart, until the interspaces are twice the width of the ribs, these last becoming more raised, though still keeping the appearance of closely-packed, semi-fused, polished, flattened granules; some of the ribs only traverse the area half-way, thereby leaving wider spaces between them, a feature that is also characteristic of *L. liratus*. The lateral areas are narrow, raised, decorated with radial ribs similar in character to those of the anterior valve, they number 20 odd in type; these radial ribs are crossed by concentric growth sulci (9 in type). The type is not disarticulated, but a separated valve from Victoria shows that there are no insertion plates; sutural laminae small, far apart, inside white.

*Girdle*.—The underside is clothed with scales, which are imbricating, long, flat, straight-sided, with rounded ends. The upperside is clothed with small, irregular, arenaceous scales, which are almost hidden in perfect specimens by a mass of short, slender, sharp-pointed, white spicules.

*Measurement*.—The type, which is badly curled, measures about 20×6.5 mm. The Port Arthur specimen, which is well preserved, measures 12×5.5 mm.; and one of the specimens dredged by Mr. May off Schouten Island is 16×6.5 mm.

*Habitat*.—The type, which has been selected because in it the girdle spicules have been well preserved, was dredged by Dr. Joseph Verco in St. Vincent Gulf, and, passing through the hands of Dr. Torr, became the property of Mr. Tom Iredale, to whom my thanks are due for presenting it to me for the purposes of this paper. Dr. Torr has also several similar shells, also dredged by Dr. Joseph Verco, but no data as to depth. Mr. W. L. May has dredged two in 15 fathoms in Geographe Strait, Schouten Island; six he dredged off the Pilot Station in D'Entrecasteaux Channel, in 9 fathoms; and Mr. E. Mawle has dredged it off Port Arthur at a similar depth; also several specimens were dredged in Victoria and are in the Bracebridge Wilson collection in the National Museum in Melbourne. May and Torr (*l.c.*), referring to some of the specimens, say: "No specimen, to our knowledge, has been taken near the shore." All the specimens I have seen have been taken at depths varying from 54 feet to 135 feet, and I have seen none but dredged specimens.

*In conclusion*.—This species is easily distinguished from the New Zealand *L. inquinatus*, Reeve, by its smaller scales and very spiculose girdle; from *L. liratus*, Adams and Angas, by the sculpture in *L. profundus*, Ashby, being less granulose, and more like polished, pectinated ribs; the spicules in *L. liratus* are much coarser, longer, and fewer in number, and the girdle scales of *L. liratus* are larger and straight-sided, *L. liratus* also being consistently a littorine shell. In both species there is incipient bridging between the ribs, but it is much stronger in *L. liratus* than in *L. profundus*, although particularly regular in the latter. In the centre of each flattened granule in the sculpture of *L. profundus* occurs a black dot, which is the terminal of a sense organ which in more specialized forms of chitons is developed into what are termed eyes.

## SUMMARY.

Name.	Habitat.	Distinguishing Characters.
<i>Lepidopleurus inquinatus</i> , Reeve	A New Zealand littorine shell not found in Australia	Spicules absent or very scanty, girdle scales comparatively large and broad
<i>L. liratus</i> , Adams and Angas	A littorine shell under stones at low water, recorded from South Australia and Victoria	Sculpture coarser and rougher than <i>L. profundus</i> , granules more raised and rounded, scales long and straight-sided, spicules coarser, longer, and comparatively few in number
<i>L. profundus</i> , Ashby .. ..	A deep-water shell only. South Australia, Tasmania, and Victoria	Granules in ribbing coalesced, flattened, and polished. Scales on girdle small, irregular; in perfect specimens, girdle covered with massed, short, slender, pointed, white spicules
<i>L. columnarius</i> , Hedley and May= <i>L. pelagicus</i> , Torr	A very deep-water shell. Off Cape Pillar, Schouten Island, Port Arthur, in Tasmania, Bass Strait, off south-east coast of South Australia	Shell exceptionally elevated and keeled, sculpture small and finely cut; girdle spiculate with flat, elongate scales
<i>L. matthewsianus</i> , Bednall = <i>L. niger</i> , Torr	A littorine shell, not rare in South Australia. One record each from Western Australia and Tasmania	Small, rounded, evenly arched; sculpture very finely granulate and regular; foot red or pink, rarely black
<i>L. badius</i> , Hedley and Hull ..	A littorine shell. Recorded from New South Wales and South Australia	Small, subcarinated, broad shell, usually more or less orange in colour; sculpture coarser and less regular than <i>L. matthewsianus</i> ; foot in South Australia, buff

For description of Plates see pp. 242 and 243.